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Hopper

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(54) **METHOD AND APPARATUS FOR FLUID SEPARATION**

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(57) **ABSTRACT**

A method and apparatus are disclosed for separating a multiphase fluid stream that includes a heavier fluid component and a lighter fluid component. The fluid flows along a first helical flowpath with a first pitch. The first helical flowpath is sufficiently long to establish a stabilised rotating fluid flow pattern for the stream. The uniform rotating fluid also flows along a second helical flowpath, the second helical flowpath having a second pitch greater than the first pitch. The lighter fluid is removed from a radially inner region of the second helical flowpath. The method and apparatus are particularly suitable for the separation of oil droplets from water, especially from water for reinjection into a subterranean formation as part of an oil and gas production operation. The method and apparatus are conveniently applied on a modular basis.

4 Claims, 12 Drawing Sheets

